EXHIBIT 13

Update to the Assessment of Contracting Outcomes for Small Disadvantaged Businesses

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Table of Contents

Abstract

My name is Daniel Chow, and I currently serve as a Senior Economist in the Office of Policy Analysis and Development (OPAD) of the Minority Business Development Agency (MBDA) at the Department of Commerce. OPAD is the research program of the MBDA, which produces analyses related to programs that support minority business enterprises (MBEs). A copy of my CV is attached to this report (Attachment 1).

This expert report was prepared for the Department of Justice in conjunction with its representation of the Small Business Administration and the United States Department of Agriculture in the matter of *Ultima Servs. Corp. v. U.S. Dep't. of Agric.*, No. 2:20-cv-00041 (E.D. Tenn.).[1] The Department of Justice asked me to review data on government contracting to assess the relationship between contracting outcomes for small businesses and the type of ownership of the businesses. This study focuses on federal contracting and the probability of certain classifiable businesses' attainment of federal contracts in a specific period, including minority-owned businesses and small disadvantaged businesses (including businesses that participate in the Small Business Administration's Section 8(a) business development program). I have not been compensated beyond my government salary for this report.

My analysis is modeled after an original study conducted in 2012 by Robert N. Rubinovitz, Ph.D., the former Deputy Chief Economist at the U.S. Department of Commerce, Economics and Statistics Administration.[2] In that study, Dr. Rubinovitz analyzed data on government contracts for small businesses for FY 2012 and looked at whether firms that were "small disadvantaged businesses" (SDBs) were more or less likely to win federal prime contracts relative to other small businesses, holding constant various factors that might influence the award of a contract.[3] The study found the odds of winning contracts for SDBs not participating in the Small Business Administration's (SBA) 8(a) business development program are estimated to be roughly 11 percent lower relative to the odds of winning contracts by firms that were not identified as SDBs.[4] The difference was statistically significant at the 95 percent significance level. Minority-owned firms (which include minority-owned small businesses, SDBs that are minority-owned and minority-owned 8(a) participants) had roughly 30 percent lower odds of winning a contract than other small firms.

In 2013, Dr. Rubinovitz provided a subsequent analysis in the *Rothe Development, Inc. v. Department of Defense* case.[5] Using an identical method as in his original 2012 study, the subsequent analysis looked at the relationship between contracting outcomes for non-8(a) minority-owned SDBs compared to all other

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[1] The views expressed in this expert report do not necessarily represent the views of the Department of Commerce, the Minority Business Development Agency, or the United States.

[2] *See* Report of Robert N. Rubinovitz at 2, *Rothe Dev., Inc. v. Dep't of Defense, et al.*, No. 1:12-cv-00744-KBJ (D.D.C. Jan. 31, 2014), ECF No. 45-2 (hereinafter "Rubinovitz Report"), a copy of which is attached to this report (Attachment 2).

[3] SDBs are defined as (1) businesses that are 51% or more owned and controlled by one or more disadvantaged persons; (2) the disadvantaged person or persons must be socially disadvantaged and economically disadvantaged; and (3) the firm must be small, according to SBA's size standards. *See* SBA SDB Definitions, available at http://www.sba.gov/contracting/government-contracting-programs/small-disadvantaged-businesses. As shown in Table 1 below, the vast majority of SDBs during the time period relevant to this study are minority-owned.

[4] Some SDBs may be eligible to participate in the SBA's 8(a) Business Development program, which is for certain small businesses that are at least 51% owned and controlled by U.S. citizens who are socially and economically disadvantaged. *See* SBA 8(a) Business Development program, available at https://www.sba.gov/federal-contracting/contracting-assistance-programs/8a-business-development-program. The complete eligibility criteria for the 8(a) program are set out in Title 13 Part 124 of the Code of Federal Regulations.

[5] *See* Rubinovitz Supplemental Report, *Rothe Dev., Inc. v. Dep't of Defense, et al.,* No. 1:12-cv-00744-KBJ (D.D.C. June 16, 2014), ECF No. 64-11.

small businesses. He found that, in virtually all cases, on an industry-by-industry basis, the odds of non-8(a) minority-owned SDBs winning contracts, all other factors being equal (size, age, legal organization, level of government clearance), were lower than the odds of other small firms winning contracts, to a statistically significant degree.

Following the methodology utilized by Rubinovitz in his 2012 study, I studied data on government contracts for small businesses and factors that might influence the award of a contract to determine whether SDBs were more or less likely to win federal prime contracts relative to other small businesses. Using data from April 2019 to August 2020, I considered the impact on the "odds ratio" of small firms winning contracts, holding other factors constant.

My analysis of the data found that the odds of winning contracts for SDBs not participating in the 8(a) business development program are estimated to be roughly 37 percent lower relative to the odds of winning contracts by firms that were not identified as SDBs. The difference was statistically significant at the 95 percent significance level. Minority-owned firms (which include minority-owned small businesses, SDBs that are minority-owned, and minority-owned 8(a) participants) had roughly 15 percent lower odds of winning a contract than other small firms.

Methodology

The Rubinovitz study constructed a database of firms that were reasonably expected to compete for federal contracts, along with information on which of these firms won contract awards, firm characteristics, and whether firm owners belonged to a specially identified group for which the federal government has contracting goals. The SBA provided data on firms in its 8(a) and/or HUBZone[6] programs and which were matched to the Federal Procurement Data System (FPDS). In addition, the Rubinovitz study obtained from Bloomberg Government an extract of FPDS data for contracts covered by federal contracting goals for specially defined groups. These sources provided data elements about the form of organization, contract awards, level of security clearance, registration dates, SDB status, industry, race and ethnicity of the registrant (or with which the registrant is affiliated), and ownership type (minority, woman, service-disabled veteran, or other veteran).

Rubinovitz used the logit model of regression to analyze the odds of an event occurring, in this case the odds of being awarded a federal contract. A logit model of regression estimates the relationship between a variable to be explained (the "dependent" variable) and one or more explanatory variables (the "independent" variables). The resulting estimated relationship between the dependent and independent variables is called the odds ratio, which is expressed by the general logit model: $Y = exp^{(\beta*X+\varepsilon)}$. As expressed in this model, Y is the dependent variable; X is one or more independent variable(s) that might explain Y; β is the unknown parameter(s) to be estimated (which measures the degree to which the independent variable(s) is related to the dependent variable); ε is the error term (which represents statistical "noise" of other elements that influence the dependent variable); and $exp^{(.)}$ is the exponential function. The model was run to obtain estimated odds ratios for winning contract awards in various industries and for a number of different variables.

As in the Rubinovitz study, the independent variables I use are the ownership of the firm (minority-owned, women-owned, and veteran-owned); the type of organization (whether the firm is a corporation, a

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[6] SBA's HUBZone program provides federal contracting assistance for qualified small businesses located in historically underutilized business zones in an effort to increase employment opportunities, investment, and economic development in such areas. *See* SBA's HUBZone Program, available at https://www.sba.gov/federal-contracting/contracting-assistance-programs/hubzone-program. The complete eligibility criteria for the HUBZone program are set out in Title 13 Part 126 of the Code of Federal Regulations.

partnership, or some other type); other firm characteristics (size, in terms of numbers of employees and revenues, level of security clearance of the firm, and firm age); and whether the firm identifies itself as a SDB and if so, whether the firm is part of the SBA's 8(a) program.

This study follows, to the maximum extent possible, the same methodology and techniques used in Rubinovitz's 2012 analysis. However, my analysis encountered some changed circumstances since Rubinovitz completed his study nine years ago, such as changes in agency data collection and data availability, as well as my independent efforts. This study also uses more updated statistical programming codes that were developed after the Rubinovitz analysis.

Key Elements in the Present Study

Data Availability

Data provided by the SBA originated from the System for Award Management (SAM) for registered companies containing firm-level information such as size, employment, location, dates of operation, industry, and Dunn and Bradstreet data universal numbering system (DUNS) numbers. SBA also provided two datasets from the Federal Procurement Data System (FPDS) for contract awards: one each for small businesses and for non-small businesses. Both the small and non-small business files contain information about business type, organizational type, ownership, dollars awarded, SDB status, and DUNS numbers. The data for registrants and awards were extracted for firms registered in SAM, or that had recorded transactions, from April 2019 to August 2020.

From the original raw datasets, I compiled a list of relevant variables from both SAM registrants' data (7,466,447 observations and 42 variables) and FPDS awards (5,104,224 observations and 55 variables).

SAM registrant data contains reported six-digit North American Industry Classification System (NAICS)[7] codes and DUNS numbers. Size standards were based on the parent company's six-digit NAICS code as reported in the SAM database. Each company was designated as "small" in each industry if it was small in any of its corresponding six-digit NAICS codes.[8] Firms were designated "not small" if they were not flagged as small in their six-digit NAICS codes. As in the Rubinovitz study, industry-level comparisons were at the three-digit NAICS level.[9] Unique observations for SAM registrants were identified by DUNS number and collapsed by three-digit NAICS code. A given DUNS number may have more than one NAICS code, indicating a firm may register in SAM to compete in one or more industries. Merging and removal of redundant and extraneous observations by DUNS number resulted in a combined file of 5,659,740 registration observations and 64 variables.

Bloomberg Government data, utilized in the Rubinovitz study, were not needed here because the FPDS datasets provided by SBA included the necessary obligations amounts, contract details, three-digit NAICS codes, and business characteristics. For Official Use Only (FOUO) and Freedom of Information Act (FOIA) data were not needed because SBA datasets have the necessary 8(a) and HUBZone (also by

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[7] NAICS is a numbering system developed for use by statistical agencies for the collection, analysis, and publication of statistical data related to the U.S. economy. NAICS codes classify business establishments by type of economic activity, process, or production. A NAICS code indicates aggregation levels by the number of digits (2 digit Sector, 3 digit Subsector, 4 digit Industry Group, 5 digit Industry, and 6 digit National Industry).

[8] Size standards vary by industry and are generally based on the number of employees or the amount of annual receipts the business has. *See* https://www.sba.gov/federal-contracting/contracting-guide/size-standards.

[9] As noted in the Rubinovitz Report, as more digits are added to the code, the industry classifications become more narrowly defined and data become sparser. Using three-digit NAICS codes provides a compromise between having sufficient data in each industry grouping with the recognition that firms can switch production within the broader three-digit category. *See* Rubinovitz Report at 4.

3

DUNS number) identifiers to indicate participating firms in these programs. A separate list of excluded firms was also not necessary because firms excluded from doing business with the federal government were flagged in the SAM dataset and dropped from the analysis.

As in the prior method used by Rubinovitz, I accounted for firms' expiration and renewal dates for registration in SAM. Unlike the previous study, which covered a single fiscal year, here the expirations/renewals spanned portions of two fiscal years, FY2019 and FY2020, as I included firms that were registered in SAM between April 2019 and August 2020. The maximum value of continuous variables was chosen if a firm belonged to a particular group in either year.

Several NAICS industry groups were excluded from the Rubinovitz study because of incomplete data, irrelevance, or because data issues in a given NAICS code prevented the regression model from producing reliable estimates. Among those, three industries were not included in this study for the reasons explained in Table 2: 521 (Monetary Authorities-Central Bank), 814 (Private Households), and 921-928 (Public Administration). The balance of industry groups that were excluded from the prior study were eligible for inclusion in this update because they had one or more non-8(a) SDB firm(s) winning a contract (see Table 2 for these re-included industries).

Table 1 summarizes the owner characteristics of the 32,038 recorded SDBs used in this study. About 88% of SDB owners are self-identified as minority, with roughly equal percentages as non-minority female and non-minority male.

Table 1

Owner Characteristics Among All Small Disadvantaged Businesses

	Number of SDBs	Percent of SDBs
Grand Total	32,038	100.0%
Total Minority*	28,325	88.4%
Black	7,573	23.6%
Hispanic	3,138	9.8%
Asian Pacific	8,623	26.9%
American Indian or Alaska Native	4,490	14.0%
Asian Subcontinent	3,135	9.8%
Not classified	1,366	4.3%
Non-Minority Female-Owned	1,877	5.9%
Non-Minority Male-Owned	1,836	5.7%
Non-Minority Male-Owned in Other Special Categories**	404	1.3%
Non-Minority Male-Owned not in Other Special Categories	1,432	4.5%

*Minority categories may overlap.
**Firms in Other Special Categories are those located in HUBZones, Service Disabled Veteran-Owned, or Other Veteran-Owned

4

Table 2

Three-digit NAICS Codes Not Included In Analysis:*

Code	Description	Reason Dropped
521	Monetary Authorities-Central Bank	This industry only consists of one entity—the Federal Reserve System
814	Private Households	No SBA small business definition
921-928	Public Administration	No SBA small business definition

* The re-included industries in this study are: 221 Utilities, 482 Rail Transportation, 486 Pipeline Transportation, 487 Scenic Sightseeing Transportation, 491 Postal Service, 522 Credit Intermediation, 525 Funds, Trusts, and Other Financial Vehicles, 533 Lessors of Nonfinancial Intangible Assets, and 551 Management of Companies and Enterprises.

5

Regressions

As noted in the Rubinovitz study, because some degree of error exists in regression models, it is necessary to measure the degree of uncertainty between the dependent and independent variables and whether their relationships are statistically significant or not. In the logit regression, which analyzes probabilities rather than continuous values, a statistically significant[10] estimate is one in which the odds ratio is different from the value 1.0. At 1.0, the odds ratio for winning is essentially equal between, for example, a non-8(a) SDB and an 8(a) SDB. An estimate that is not statistically significant indicates the odds ratio cannot be distinguished as being different from the odds of winning a contract with another variable.

Regression analysis using the logit model, plus a variant procedure applied in the previous study called firthlogit, produced odds ratios in similar manner as the original study when using the more recent data. Firthlogit is a variant of the logit model that mitigates problematic situations in which an independent variable is perfectly associated with only one outcome value of the dependent variable.[11] Firthlogit adjusts for possible estimation biases for industries that have a very low contract win rate and in cases where winning or not winning a contract is perfectly or nearly perfectly equal to a linear function of one of the control variables (for example, in industries where no women-owned businesses won any contracts). The firthlogit method minimizes the generation of the extremely large standard errors or highly inflated coefficients that might occur from these perfectly associated relationships during logistic regression estimation.

Pseudo R-squared results are not reported because the firthlogit procedure used in this updated study does not produce them.[12] Pseudo R-squared methodologies vary widely for different purposes. The Pseudo R-squared is one class of R-squared statistics which are measures of the proportion of variance for a dependent variable that is explained by the independent variable(s) in a regression. R-squared values do not measure model adequacy and higher or lower values alone do not fully measure the fit of the model and data. The presence or lack of a Pseudo R-squared or an R-squared does not alter the accuracy or validity of regression results.

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[10] The statistical significance of odds ratios is determined by calculating their p-values. A p-value is a test for whether a coefficient is equal to zero or not equal to zero. A low p-value (less than or equal to 0.5) indicates the coefficient is not equal to zero and so a statistically significant relationship exists between the response and predictor variable(s). A high p-value (greater than 0.5) indicates changes in the predictor(s) are not associated with changes in the response variable, and are not statistically significant.

[11] *See* Firth, D. 1993, "Bias reduction of maximum likelihood estimates." Biometrika 80:27-38; Heinze, G. and Schemper, M. 2002, "A solution to the problem of separation in logistic regression," Statistics in Medicine 21:2409-19. I used the firthlogit Stata module written by Joseph Coveney to make these estimates. (http://econpapers.repec.org/software/bocbocode/s456948.htm).

[12] R-squared is an equation that measures the proportion of the total percentage of variance attributed to all the independent variables. An R2 value is between 0 (the regression model does not explain any variation in the dependent variable) and 1 (the regression model explains all the variation in the dependent variable).

6

Overview of Results

As in the prior study, the ultimate question of interest is whether the data show differences in the odds of contracts being won by minority-owned small businesses, especially those identified as SDBs and those participating in the 8(a) program, compared to other small businesses. I used the logit regression analysis that was implemented in the earlier study to produce odds ratios for the same set of independent variables. The odds ratio is the estimated relationship between the dependent variable (whether a firm wins or does not win a contract) and the independent variables (such as ownership type, type of organization, and firm characteristics).

Table 3 shows that woman-owned, minority-owned, and other veteran-owned firms have lower odds than other firms to win a contract, all else being equal. Most of the standard errors (17 out of 18) in Table 3 are small relative to their estimated odds ratios. The odds of winning a contract for SDBs who do not participate in the 8(a) program is about 37 percent less than for other firms, and this result is statistically significant. Firms in the 8(a) program, in a certified HUBZone, or owned by service-disabled veterans have statistically significant and larger odds of winning a contract. The firm size and age ratios favor the larger and older firms, reflecting their greater likelihood at competing for and thus winning contracts. Among ownership types, partnership, corporate not-tax exempt, and corporate tax-exempt firms had lower odds and were statistically significant. Sole proprietorship was the only group that had odds that were not statistically significant. The type of security clearance held by a firm had a strong positive effect on the firm's odds of winning a contract, which is understandable because clearances are often prerequisites for competing for many types of government contracts.

Table 4 summarizes the results when the same model is estimated separately for each three-digit NAICS code (Table 5 is a more detailed list of the industry estimates and Table 6 defines the NAICS codes used in Table 5). In about 90% of industries, accounting for over 99% of contracts, non-8(a) SDB firms' odds of winning contracts are lower, all else equal, than other firms. In 50% of industries, representing over 93% of contracts, the odds of winning are statistically significantly lower.

Table 4a shows the same information for minority-owned firms. Minority-owned firms' odds of winning contracts are lower in about 67% of industries, representing over 50% of contracts. In about a quarter (23.6%) of industries, the odds of winning are statistically significantly lower, accounting for 16.8% of contracts.

One reason that industry regressions might change categories from the Rubinovitz study relates to sample size. The number of observations[13] is a key factor in the size of a standard error, which is used in determining if an estimate is considered to be sufficiently precise to be considered statistically significant.[14] With the large number of observations in this study, the data very likely reflects the odds of winning.

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[13] The Rubinovitz study had a total of 765,163 industry observations compared to the current study of 1,171,497 industry observations.

[14] Statistical significance occurs when the point estimate of the odds ratio, plus or minus the standard errors, are sufficiently far from one. The formula for computing standard errors is inversely proportional to the square root of the number of observations, which means that there is a direct inverse relationship between a larger number of observations and smaller standard errors. Also note that the closer the point estimate of the odds ratio is to one, the smaller the standard errors need to be for the range defined by the point estimate and standard errors to not include one.

One way to see this relationship is to split the industry regression into groups by the number of observations in that industry regression. In Table 5, there are 31 three-digit NAICS code industries with at least 9,000 observations (and up to 177,411 observations). In 27 of these 31 industries with a larger sample size, the estimate for the odds ratios of SDBs is statistically significant (the estimates range between 0.326 and 0.803 and have p-values between 0 and 0.019). Among the industry regressions with smaller sample sizes, there are 17 three-digit NAICS code industries with fewer than 2,000 observations, and in only one of these is the odds ratio on the SDB variable statistically significant (p-value of 0.011, and the estimate of the odds ratio is less than 0.5).

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8

Table 3

Pooled Regression Results

	Odds Ratios
SDB not 8(a)	0.632*** (0.0100)
8(a)	2.606*** (0.1013)
woman-owned	0.899*** (0.0147)
minority-owned	0.858*** (0.0163)
hubzone	1.746*** (0.0662)
service-disabled veteran	1.215*** (0.0320)
other veteran	0.902*** (0.0242)
log age	1.167*** (0.0085)
log employment	1.037*** (0.0045)
log receipts	1.055*** (0.0028)
sole proprietor (omitted: "other" orgs)	1.030 (0.0318)
partnership	0.753*** (0.0237)
corporate not tax-exempt	0.820*** (0.0217)
corporate tax-exempt	0.530*** (0.1166)
government non-classified	1.630*** (0.0310)
government confidential	1.993*** (0.1011)
government secret	1.841*** (0.0590)
government top secret	2.186*** (0.0591)
constant	0.00229*** (0.0001)
No. Observations	504,819

Standard errors in parentheses: (*** $p<0.01$, ** $p<0.05$, * $p<0.1$)

9

Table 4

Summary Results from Industry Regressions: Difference in Odds of Non-8(a) SDB's* Winning Contracts

	Contracts		Awards		Industries	
Lower odds statistically significant	278,492	93.6%	$47,513,256,560	91.6%	45	50.6%
Lower odds not statistically significant	17,790	6.0%	$4,250,817,536	8.2%	35	39.3%
Higher odds statistically significant	0	0.0%	$0	0.0%	0	0.0%
Higher odds not statistically significant	1,253	0.4%	$112,927,496	0.2%	9	10.1%
Totals	297,535	100.0%	$51,877,001,592	100.0%	89	100.0%

*SDBs are counted once for each industry in which they are registered or won contracts. Percents may not sum to 100% due to rounding.

Table 4a

Summary Results from Industry Regressions: Difference in Odds of Minority-Owned Businesses* Winning Contracts

	Contracts		Awards		Industries	
Lower odds statistically significant	50,249	16.9%	$18,453,358,912	35.6%	21	23.6%
Lower odds not statistically significant	103,510	34.8%	$19,657,230,336	37.9%	39	43.8%
Higher odds statistically significant	21,195	7.1%	$8,289,815,552	16.0%	1	1.1%
Higher odds not statistically significant	122,581	41.2%	$5,476,597,760	10.6%	28	31.5%
Totals	297,535	100.0%	$51,877,002,560	100.0%	89	100.0%

*Minority Owned Businesses are counted once for each industry in which they are registered or won contracts. Percents may not sum to 100% due to rounding.

10

Table 5: Industry Specific Regression Results

	111	112	113	114	115	211	212	213	221	236	237
SDB not 8(a)	0.933	0.601	0.637	0.648	0.690***	0.778	0.936	0.180***	0.506***	0.740***	0.781***
	(0.835)	(0.257)	(0.311)	(0.459)	(0.000)	(0.832)	(0.811)	(0.000)	(0.000)	(0.002)	(0.006)
8(a)	5.515	1.907	2.825	0.405	0.636	583.2*	1.939	0.225*	0.498*	5.340***	3.748***
	(0.116)	(0.705)	(0.236)	(0.630)	(0.144)	(0.056)	(0.280)	(0.096)	(0.098)	(0.000)	(0.000)
woman-owned	0.472	1.255	0.748	0.731	0.748***	2.956	0.867	2.299***	0.945	1.233**	0.878
	(0.117)	(0.619)	(0.580)	(0.619)	(0.004)	(0.208)	(0.661)	(0.002)	(0.760)	(0.015)	(0.174)
minority-owned	0.372*	0.733	2.227	1.100	0.696***	0.712	0.680	1.730*	0.926	0.868	0.494***
	(0.100)	(0.610)	(0.115)	(0.894)	(0.005)	(0.848)	(0.283)	(0.095)	(0.704)	(0.134)	(0.000)
hubzone	1.432	1.085	0.771	8.519*	1.766***	3.125	1.507	0.908	1.253	2.076***	2.887***
	(0.721)	(0.956)	(0.716)	(0.083)	(0.000)	(0.497)	(0.271)	(0.871)	(0.459)	(0.000)	(0.000)
service-disabled veteran	0.916	0.760	1.014	1.106	0.646**	1.637	0.794	0.904	1.154	2.986***	1.381***
	(0.898)	(0.729)	(0.987)	(0.906)	(0.021)	(0.793)	(0.651)	(0.862)	(0.538)	(0.000)	(0.005)
other veteran	0.141	0.199	0.290	0.363	0.670**	3.196	0.397	0.850	0.748	1.174	0.946
	(0.171)	(0.258)	(0.388)	(0.517)	(0.022)	(0.499)	(0.268)	(0.748)	(0.394)	(0.342)	(0.747)
log age	1.513**	0.990	1.698**	0.672	1.371***	2.658	1.209	1.258	1.008	1.240***	1.171***
	(0.017)	(0.961)	(0.027)	(0.177)	(0.000)	(0.118)	(0.209)	(0.133)	(0.915)	(0.000)	(0.001)
log employment	0.852*	1.200*	1.279*	1.086	0.896***	0.506	0.812*	1.063	0.727***	0.919***	0.893***
	(0.055)	(0.064)	(0.076)	(0.754)	(0.000)	(0.102)	(0.061)	(0.535)	(0.000)	(0.007)	(0.000)
log receipts	1.079	0.976	0.913*	1.774***	1.032**	1.320	1.073	1.099	1.203***	1.176***	1.045***
	(0.204)	(0.647)	(0.054)	(0.006)	(0.028)	(0.256)	(0.229)	(0.153)	(0.000)	(0.000)	(0.008)
sole proprietorship	0.998	0.950	1.177	5.729	1.085	0.038	0.638	0.905	0.836	0.589***	0.705**
(omitted: "other" orgs)	(0.998)	(0.946)	(0.828)	(0.270)	(0.595)	(0.104)	(0.405)	(0.865)	(0.592)	(0.003)	(0.048)
partnership	0.538	0.884	1.106	0.570	0.817	0.0330*	0.531	0.465	0.724	0.536***	0.552***
	(0.332)	(0.867)	(0.900)	(0.789)	(0.246)	(0.067)	(0.235)	(0.134)	(0.286)	(0.000)	(0.000)
corporate not tax-exempt	0.703	0.684	0.965	5.073	0.914	0.0228**	0.600	0.545	0.755	0.646***	0.664***
	(0.540)	(0.577)	(0.958)	(0.278)	(0.540)	(0.027)	(0.207)	(0.120)	(0.262)	(0.000)	(0.002)
corporate tax-exempt	5.318	13.130	6.983	44.38*	0.635	0.000	2.071	4.278	2.008	0.0450**	0.0940*
	(0.307)	(0.154)	(0.275)	(0.094)	(0.760)	(0.000)	(0.648)	(0.370)	(0.641)	(0.030)	(0.099)
government non-classified	1.233	1.135	0.945	7.435***	0.969	2.165	0.784	2.558***	1.016	1.579***	1.132
(omitted: no security reported)	(0.754)	(0.879)	(0.935)	(0.001)	(0.840)	(0.496)	(0.592)	(0.001)	(0.940)	(0.000)	(0.247)
government confidential	5.079	2.740	2.579	8.195**	0.997	140.100	1.681	2.420	3.219***	2.269***	0.860
	(0.277)	(0.492)	(0.537)	(0.021)	(0.996)	(0.153)	(0.545)	(0.204)	(0.001)	(0.000)	(0.671)
government secret	0.391	5.725*	0.454	3.214	0.202*	0.446	0.898	0.278	0.869	1.671***	1.094
	(0.525)	(0.082)	(0.595)	(0.296)	(0.054)	(0.723)	(0.941)	(0.373)	(0.773)	(0.002)	(0.693)
government top secret	1.249	6.591*	0.455	8.526	0.993	0.819	4.048	1.824	1.585	1.241	0.505**
	(0.810)	(0.064)	(0.599)	(0.299)	(0.989)	(0.902)	(0.131)	(0.334)	(0.120)	(0.190)	(0.032)
Constant	0.000627***	0.0150***	0.000328***	3.97e-08***	0.0187***	0.03520	0.0130***	0.000151***	0.00361***	0.000182***	0.00284***
	(0.00000)	(0.00019)	(0.00000)	(0.00000)	(0.00000)	(0.22100)	(0.00011)	(0.00000)	(0.00000)	(0.00000)	(0.00000)
Observations	3,771	2,444	2,894	734	8,969	198	3,384	4,296	13,160	41,199	35,596

11

Table 5: Industry Specific Regression Results

	238	311	312	313	314	315	316	321	322	323	324
SDB not 8(a)	0.704***	0.819	0.474	0.564**	0.575***	0.543***	0.899	0.695	0.782	0.419***	0.753
	(0.000)	(0.185)	(0.208)	(0.012)	(0.000)	(0.000)	(0.779)	(0.118)	(0.220)	(0.001)	(0.192)
8(a)	3.927***	0.269	7.552*	0.301	0.662	0.548	3.006	0.678	0.415	0.386	0.429
	(0.000)	(0.370)	(0.087)	(0.189)	(0.244)	(0.198)	(0.227)	(0.584)	(0.309)	(0.294)	(0.123)
woman-owned	1.011	0.554***	2.055	1.121	0.996	0.851	0.840	1.090	1.110	0.743	0.868
	(0.843)	(0.001)	(0.185)	(0.579)	(0.977)	(0.305)	(0.632)	(0.710)	(0.578)	(0.196)	(0.528)
minority-owned	0.680***	0.651**	0.323*	0.835	0.987	0.861	0.547	0.525**	0.677*	1.082	1.110
	(0.000)	(0.020)	(0.085)	(0.485)	(0.938)	(0.428)	(0.233)	(0.045)	(0.090)	(0.781)	(0.657)
hubzone	1.866***	2.773***	11.64***	2.365***	1.071	2.086***	0.988	0.837	1.644	1.380	0.799
	(0.000)	(0.002)	(0.001)	(0.006)	(0.776)	(0.004)	(0.984)	(0.695)	(0.110)	(0.570)	(0.581)
service-disabled veteran	1.982***	0.713	0.813	0.566	1.341	1.099	0.586	1.438	1.002	0.716	0.562*
	(0.000)	(0.271)	(0.786)	(0.132)	(0.122)	(0.669)	(0.374)	(0.240)	(0.994)	(0.440)	(0.089)
other veteran	1.042	0.265***	1.020	0.749	0.724	0.658	0.467	0.974	1.008	0.436	0.210**
	(0.673)	(0.006)	(0.983)	(0.497)	(0.214)	(0.172)	(0.254)	(0.947)	(0.982)	(0.134)	(0.016)
log age	1.097***	0.899*	1.196	1.146	1.001	1.168**	0.988	1.020	1.003	1.096	1.052
	(0.001)	(0.097)	(0.467)	(0.174)	(0.994)	(0.038)	(0.943)	(0.866)	(0.977)	(0.450)	(0.594)
log employment	1.030	0.826***	0.692**	0.810***	0.975	0.845***	1.348***	0.677***	0.813***	0.778***	0.904*
	(0.109)	(0.000)	(0.013)	(0.005)	(0.609)	(0.002)	(0.004)	(0.000)	(0.003)	(0.007)	(0.098)
log receipts	1.064***	1.157***	0.934	1.159***	1.182***	1.195***	1.026	1.282***	1.168***	1.263***	1.080**
	(0.000)	(0.000)	(0.222)	(0.004)	(0.000)	(0.000)	(0.670)	(0.000)	(0.000)	(0.002)	(0.015)
sole proprietorship	0.748**	0.422**	0.402	0.568	0.734	0.421**	0.454	0.747	0.399**	0.316**	1.488
(omitted: "other" orgs)	(0.016)	(0.014)	(0.260)	(0.275)	(0.344)	(0.020)	(0.267)	(0.514)	(0.023)	(0.011)	(0.342)
partnership	0.823*	0.702	0.257*	0.565	0.574*	0.569*	0.361*	0.403*	0.404**	0.329***	1.044
	(0.080)	(0.155)	(0.092)	(0.203)	(0.064)	(0.064)	(0.089)	(0.056)	(0.012)	(0.006)	(0.903)
corporate not tax-exempt	0.841*	0.681*	0.280*	0.741	0.852	0.608**	0.345**	0.718	0.386***	0.252***	0.734
	(0.061)	(0.068)	(0.056)	(0.398)	(0.502)	(0.043)	(0.021)	(0.325)	(0.001)	(0.000)	(0.312)
corporate tax-exempt	0.166**	0.283	0.783	3.435	0.486	0.711	0.000	2.609	0.282	1.021	0.484
	(0.031)	(0.459)	(0.889)	(0.471)	(0.640)	(0.825)	(0.000)	(0.536)	(0.461)	(0.990)	(0.629)
government non-classified	1.666***	1.235	2.256	1.471	1.905***	1.510**	1.313	1.644*	1.849***	2.210***	1.294
(omitted: no security reported)	(0.000)	(0.389)	(0.257)	(0.114)	(0.000)	(0.022)	(0.539)	(0.061)	(0.003)	(0.002)	(0.331)
government confidential	1.732***	0.294	3.880	4.430***	1.166	1.071	3.543	1.130	0.584	1.947	2.254
	(0.001)	(0.400)	(0.373)	(0.005)	(0.765)	(0.921)	(0.198)	(0.885)	(0.527)	(0.430)	(0.177)
government secret	1.444***	0.260	14.38**	1.190	1.212	0.651	1.601	2.179	2.624*	2.395	1.672
	(0.004)	(0.351)	(0.012)	(0.776)	(0.549)	(0.326)	(0.509)	(0.175)	(0.057)	(0.140)	(0.387)
government top secret	0.967	1.123	1.218	6.156**	2.347**	0.0733*	1.873	1.353	1.818	1.064	0.875
	(0.810)	(0.900)	(0.905)	(0.017)	(0.047)	(0.067)	(0.525)	(0.722)	(0.348)	(0.917)	(0.818)
Constant	0.00153***	0.0308***	3.09700	0.0225***	0.00773***	0.00739***	0.00142***	0.00378***	0.0155***	0.00558***	0.0235***
	(0.00000)	(0.00000)	(0.62300)	(0.00001)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)
Observations	82,747	4,725	1,503	1,897	4,404	4,171	1,513	4,549	2,949	5,527	2,228

12

Table 5: Industry Specific Regression Results

	325	327	331	332	333	334	335	336	337	339	423
SDB not 8(a)	0.571***	0.488***	0.583***	0.464***	0.568***	0.594***	0.496***	0.564***	0.616***	0.609***	0.634***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
8(a)	0.650	0.337**	0.373**	0.419***	0.531***	0.636***	0.362***	0.468***	1.054	0.647**	0.878
	(0.156)	(0.045)	(0.031)	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.839)	(0.037)	(0.572)
woman-owned	0.935	1.080	1.296*	1.107*	1.037	0.972	1.091	1.064	1.094	0.859**	1.110
	(0.523)	(0.666)	(0.065)	(0.092)	(0.559)	(0.604)	(0.271)	(0.363)	(0.447)	(0.017)	(0.234)
minority-owned	0.888	1.045	1.296	1.078	1.094	0.908	1.110	1.200**	0.863	0.962	0.949
	(0.310)	(0.832)	(0.113)	(0.309)	(0.227)	(0.110)	(0.253)	(0.023)	(0.312)	(0.602)	(0.613)
hubzone	1.054	0.636	1.423	1.241*	1.257*	1.301**	1.286*	1.334**	1.219	1.020	1.829***
	(0.811)	(0.228)	(0.144)	(0.074)	(0.079)	(0.020)	(0.097)	(0.034)	(0.369)	(0.894)	(0.000)
service-disabled veteran	1.112	1.059	0.840	1.097	1.046	0.921	0.876	0.883	1.298*	1.287***	1.011
	(0.435)	(0.814)	(0.448)	(0.314)	(0.630)	(0.305)	(0.260)	(0.245)	(0.098)	(0.003)	(0.937)
other veteran	0.889	0.951	0.674	1.007	1.046	0.842**	0.776*	0.957	0.768	0.968	0.722*
	(0.517)	(0.873)	(0.133)	(0.936)	(0.621)	(0.038)	(0.058)	(0.664)	(0.267)	(0.747)	(0.050)
log age	0.762***	0.874	1.021	0.912***	0.941**	1.198***	1.040	1.147***	0.971	0.929***	0.938
	(0.000)	(0.103)	(0.750)	(0.000)	(0.022)	(0.000)	(0.282)	(0.000)	(0.653)	(0.006)	(0.112)
log employment	0.772***	0.797***	0.814***	0.903***	0.884***	0.917***	0.909***	0.853***	0.767***	0.960**	0.841***
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.046)	(0.000)
log receipts	1.234***	1.216***	1.142***	1.082***	1.124***	1.108***	1.081***	1.084***	1.286***	1.119***	1.174***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
sole proprietorship	0.580**	1.245	0.592*	0.797*	0.682***	0.658***	0.825	0.790*	0.748	0.679***	0.541***
(omitted: "other" orgs)	(0.014)	(0.528)	(0.098)	(0.074)	(0.004)	(0.000)	(0.278)	(0.095)	(0.300)	(0.005)	(0.004)
partnership	0.467***	0.601	0.617*	0.717***	0.748**	0.642***	0.684**	0.709***	0.929	0.686***	0.757
	(0.000)	(0.136)	(0.081)	(0.004)	(0.011)	(0.000)	(0.016)	(0.006)	(0.756)	(0.002)	(0.102)
corporate not tax-exempt	0.592***	0.762	0.648**	0.785***	0.755***	0.717***	0.828	0.733***	0.785	0.750***	0.747**
	(0.001)	(0.282)	(0.043)	(0.009)	(0.002)	(0.000)	(0.119)	(0.002)	(0.222)	(0.004)	(0.037)
corporate tax-exempt	0.339	0.906	0.938	0.126	1.034	0.393	0.764	0.119	0.541	0.411	0.195
	(0.466)	(0.955)	(0.949)	(0.148)	(0.954)	(0.158)	(0.758)	(0.137)	(0.491)	(0.300)	(0.255)
government non-classified	1.423***	2.431***	1.920***	1.808***	1.372***	1.243***	1.518***	1.265***	1.429**	1.380***	1.719***
(omitted: no security reported)	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.012)	(0.000)	(0.000)
government confidential	2.675***	1.877	1.582	1.686***	1.391**	1.275*	2.148***	1.330*	0.772	1.560**	2.245***
	(0.000)	(0.218)	(0.211)	(0.000)	(0.044)	(0.083)	(0.000)	(0.071)	(0.601)	(0.029)	(0.003)
government secret	2.190***	2.990***	1.718	2.224***	1.721***	1.239***	1.986***	1.073	1.054	1.651***	1.717***
	(0.000)	(0.008)	(0.116)	(0.000)	(0.000)	(0.003)	(0.000)	(0.461)	(0.872)	(0.000)	(0.009)
government top secret	0.920	4.778***	2.186*	1.201	1.064	0.767***	1.304**	0.702***	0.924	0.971	3.080***
	(0.792)	(0.002)	(0.090)	(0.172)	(0.641)	(0.000)	(0.042)	(0.001)	(0.813)	(0.866)	(0.000)
Constant	0.00871***	0.00148***	0.0129***	0.0214***	0.0134***	0.0107***	0.0219***	0.0306***	0.00682***	0.0106***	0.00205***
	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)
Observations	14,579	4,653	3,820	31,295	27,081	33,320	14,334	18,763	6,527	23,588	58,281

13

Table 5: Industry Specific Regression Results

	424	425	441	442	443	444	445	446	447	448	451
SDB not 8(a)	0.716*	0.611	0.520**	1.039	1.015	0.326***	1.658	0.635	0.980	0.319*	0.589
	(0.098)	(0.274)	(0.037)	(0.927)	(0.975)	(0.000)	(0.843)	(0.303)	(0.991)	(0.075)	(0.424)
8(a)	1.722	9.444**	0.695	0.634	1.568	0.112**	321.400	0.269	10.630	0.461	1.072
	(0.281)	(0.032)	(0.700)	(0.765)	(0.614)	(0.015)	(0.142)	(0.391)	(0.311)	(0.684)	(0.966)
woman-owned	1.007	0.518	1.084	0.706	1.014	0.681*	0.640	0.906	2.500	1.128	1.416
	(0.969)	(0.172)	(0.806)	(0.417)	(0.972)	(0.054)	(0.838)	(0.819)	(0.636)	(0.846)	(0.539)
minority-owned	0.724	0.169**	1.289	0.833	1.760	1.108	0.803	0.848	0.982	0.147**	1.449
	(0.174)	(0.020)	(0.488)	(0.697)	(0.254)	(0.665)	(0.944)	(0.733)	(0.994)	(0.043)	(0.624)
hubzone	1.207	0.501	3.865**	1.319	2.208	0.956	15.650	3.828*	11.140	7.417**	0.795
	(0.657)	(0.643)	(0.014)	(0.758)	(0.270)	(0.912)	(0.347)	(0.060)	(0.294)	(0.042)	(0.883)
service-disabled veteran	0.756	0.665	1.137	1.468	0.550	0.315***	5.290	1.402	2.749	1.251	2.374
	(0.413)	(0.556)	(0.786)	(0.475)	(0.408)	(0.001)	(0.522)	(0.523)	(0.613)	(0.776)	(0.259)
other veteran	0.824	1.840	1.260	2.115	0.176	0.903	6.243	0.642	2.345	0.161	1.188
	(0.590)	(0.243)	(0.583)	(0.187)	(0.231)	(0.752)	(0.352)	(0.602)	(0.732)	(0.294)	(0.844)
log age	0.956	0.891	0.868	0.799	1.658**	0.729***	1.084	0.689**	0.745	0.562**	1.792*
	(0.622)	(0.545)	(0.266)	(0.270)	(0.048)	(0.000)	(0.894)	(0.020)	(0.707)	(0.022)	(0.084)
log employment	0.866**	1.551***	0.924	0.799	0.826	0.678***	1.820*	1.198	1.639	0.569***	0.761
	(0.049)	(0.000)	(0.402)	(0.128)	(0.160)	(0.000)	(0.058)	(0.153)	(0.335)	(0.002)	(0.249)
log receipts	1.218***	0.972	1.047	1.043	1.000	1.212***	0.910	1.105	0.847	1.053	1.429**
	(0.000)	(0.586)	(0.344)	(0.538)	(0.995)	(0.000)	(0.549)	(0.168)	(0.252)	(0.535)	(0.021)
sole proprietorship (omitted: "other" orgs)	1.086	0.218	0.284**	0.587	0.0388**	0.359**	0.385	0.390	0.666	0.318	0.225
	(0.843)	(0.107)	(0.025)	(0.514)	(0.032)	(0.017)	(0.672)	(0.267)	(0.857)	(0.350)	(0.349)
partnership	0.875	0.369	0.239***	0.693	0.396	0.214***	0.325	0.336	0.303	0.741	0.556
	(0.716)	(0.102)	(0.003)	(0.623)	(0.169)	(0.001)	(0.494)	(0.157)	(0.540)	(0.779)	(0.533)
corporate not tax-exempt	0.815	0.267***	0.340***	0.559	0.191***	0.605*	0.142	0.573	0.111	0.892	0.593
	(0.495)	(0.007)	(0.001)	(0.359)	(0.003)	(0.063)	(0.102)	(0.343)	(0.135)	(0.904)	(0.475)
corporate tax-exempt	1.349	1.876	2.183	2.302	2.550	8.844	4.552	22.30*	1.110	4,432***	107.5**
	(0.840)	(0.760)	(0.708)	(0.706)	(0.610)	(0.197)	(0.629)	(0.087)	(0.973)	(0.000)	(0.034)
government non-classified (omitted: no security reported)	1.985***	0.500	2.003*	2.915**	3.177***	5.607***	2.777	2.412*	2.640	4.171**	2.798
	(0.004)	(0.298)	(0.069)	(0.019)	(0.008)	(0.000)	(0.565)	(0.069)	(0.666)	(0.017)	(0.112)
government confidential	2.476	1.655	3.203	2.107	4.706*	9.160***	24.350	2.933	12.790	28.27**	4.181
	(0.164)	(0.731)	(0.174)	(0.609)	(0.095)	(0.000)	(0.280)	(0.461)	(0.369)	(0.034)	(0.353)
government secret	2.678*	0.500	3.196*	2.045	2.161	22.09***	8.058	4.685	13.040	7.341*	3.128
	(0.081)	(0.633)	(0.058)	(0.618)	(0.270)	(0.000)	(0.453)	(0.105)	(0.445)	(0.091)	(0.466)
government top secret	1.725	0.254	0.576	4.292	0.192**	37.63***	12.730	3.410	2.738	14.020	5.654
	(0.401)	(0.348)	(0.752)	(0.168)	(0.047)	(0.000)	(0.409)	(0.181)	(0.734)	(0.127)	(0.267)
Constant	0.000178***	0.00152***	0.0230***	0.26100	0.0678*	0.0129***	0.00708	0.000355***	0.51400	0.22100	0.0000957***
	(0.00000)	(0.00000)	(0.00011)	(0.33300)	(0.07430)	(0.00000)	(0.20500)	(0.00000)	(0.86700)	(0.40800)	(0.00010)
Observations	18,368	3,718	5,720	3,229	2,041	9,013	1,222	4,457	484	2,606	2,382

14

Table 5: Industry Specific Regression Results

	452	453	454	481	482	483	484	485	486	487	488
SDB not 8(a)	4.309	0.594	2.089	0.974	0.927	0.936	0.654**	0.425***	0.374	0.194	0.395***
	(0.261)	(0.116)	(0.178)	(0.919)	(0.963)	(0.863)	(0.048)	(0.000)	(0.139)	(0.179)	(0.000)
8(a)	1,510**	0.269	2.443	0.832	6.451	2.743	3.045***	1.248	0.619	15.700	0.374***
	(0.042)	(0.371)	(0.571)	(0.904)	(0.543)	(0.319)	(0.001)	(0.687)	(0.788)	(0.436)	(0.008)
woman-owned	0.104	1.269	0.797	0.878	1.190	0.669	0.835	0.789	0.847	0.501	1.195
	(0.231)	(0.423)	(0.693)	(0.669)	(0.911)	(0.370)	(0.383)	(0.243)	(0.823)	(0.644)	(0.167)
minority-owned	0.164	1.618	0.655	0.218***	1.393	0.445*	1.227	0.304***	0.517	0.350	1.124
	(0.259)	(0.151)	(0.499)	(0.003)	(0.849)	(0.096)	(0.375)	(0.000)	(0.387)	(0.530)	(0.451)
hubzone	3.794	0.960	4.378	3.028*	3.419	0.962	0.441*	3.045***	2.275	8.620	1.466
	(0.587)	(0.963)	(0.121)	(0.066)	(0.595)	(0.964)	(0.077)	(0.003)	(0.469)	(0.217)	(0.109)
service-disabled veteran	0.206	1.158	0.191	0.526	1.628	0.272	0.967	0.842	1.153	1.185	0.779
	(0.403)	(0.750)	(0.258)	(0.215)	(0.779)	(0.130)	(0.912)	(0.513)	(0.864)	(0.916)	(0.240)
other veteran	0.613	1.352	1.041	1.223	2.505	0.104	0.699	0.895	0.388	2.724	0.936
	(0.830)	(0.525)	(0.964)	(0.498)	(0.670)	(0.113)	(0.349)	(0.707)	(0.400)	(0.327)	(0.734)
log age	2.367	0.793	1.300	1.692***	1.050	1.160	1.474***	1.299***	1.784*	1.294	1.384***
	(0.179)	(0.128)	(0.291)	(0.000)	(0.960)	(0.396)	(0.000)	(0.003)	(0.079)	(0.607)	(0.000)
log employment	0.564	0.728***	0.731*	1.057	0.929	0.880	0.976	0.997	1.047	1.131	0.939
	(0.238)	(0.005)	(0.069)	(0.496)	(0.902)	(0.224)	(0.715)	(0.953)	(0.757)	(0.708)	(0.106)
log receipts	0.992	1.265***	1.097	1.020	0.981	1.034	1.094**	0.973	0.966	0.894	1.189***
	(0.965)	(0.002)	(0.379)	(0.674)	(0.908)	(0.538)	(0.034)	(0.235)	(0.612)	(0.295)	(0.000)
sole proprietorship	0.056	0.267**	0.328	0.241*	0.819	0.742	0.995	2.628***	0.167*	2.175	0.932
(omitted: "other" orgs)	(0.104)	(0.037)	(0.276)	(0.051)	(0.931)	(0.585)	(0.991)	(0.004)	(0.085)	(0.677)	(0.784)
partnership	0.0371*	0.655	0.349	0.383**	1.216	0.315**	0.709	0.625	0.0114***	1.873	0.616**
	(0.065)	(0.399)	(0.224)	(0.048)	(0.923)	(0.036)	(0.383)	(0.005)	(0.005)	(0.740)	(0.047)
corporate not tax-exempt	0.0666**	0.395**	0.513	0.500**	0.433	0.317***	0.754	0.434**	0.157***	0.557	0.697**
	(0.044)	(0.034)	(0.288)	(0.049)	(0.689)	(0.002)	(0.337)	(0.010)	(0.004)	(0.731)	(0.049)
corporate tax-exempt	14.430	2.810	3.066	40.82**	0.000	3.901	0.611	3.286	0.000	0.000	0.411
	(0.443)	(0.566)	(0.572)	(0.039)	(0.000)	(0.440)	(0.744)	(0.507)	(0.000)	(0.000)	(0.542)
government non-classified	1.068	2.237**	2.074	0.716	3.225	1.200	3.002***	0.726	4.141**	1.102	1.826***
(omitted: no security reported)	(0.968)	(0.045)	(0.304)	(0.372)	(0.519)	(0.723)	(0.000)	(0.330)	(0.010)	(0.948)	(0.000)
government confidential	60.380	3.785	5.466	2.216	8.674	5.336**	5.005***	2.746	4.879	21.640	1.524
	(0.140)	(0.117)	(0.267)	(0.256)	(0.213)	(0.020)	(0.000)	(0.107)	(0.347)	(0.184)	(0.274)
government secret	39.030	6.614***	6.526*	1.284	4.683	3.978***	2.220**	0.528	0.917	3.625	0.914
	(0.140)	(0.000)	(0.057)	(0.475)	(0.418)	(0.000)	(0.036)	(0.333)	(0.957)	(0.447)	(0.666)
government top secret	4.614	3.321**	5.067	1.234	6.266	2.303	1.308	1.884	1.446	3.490	0.857
	(0.413)	(0.040)	(0.113)	(0.582)	(0.447)	(0.178)	(0.640)	(0.192)	(0.822)	(0.655)	(0.451)
Constant	1.85300	0.0167***	0.0326*	0.00148***	0.32300	0.0246***	0.000242***	0.0125***	0.00161***	0.06070	0.000243***
	(0.84400)	(0.00099)	(0.04810)	(0.00000)	(0.82000)	(0.00085)	(0.00000)	(0.00000)	(0.00061)	(0.38300)	(0.00000)
Observations	424	7,117	3,983	2,927	404	1,987	15,302	4,871	992	901	16,219

15

Table 5: Industry Specific Regression Results

	491	492	493	511	512	515	517	518	519	522	523
SDB not 8(a)	11.47*	0.727	0.495**	0.478***	1.045	0.968	0.657**	0.537***	0.368***	0.162*	0.502
	(0.086)	(0.354)	(0.034)	(0.000)	(0.886)	(0.931)	(0.023)	(0.006)	(0.000)	(0.074)	(0.285)
8(a)	52.48**	1.336	0.824	0.672	10.92***	1.844	1.111	1.271	1.388	0.291	2.263
	(0.039)	(0.657)	(0.725)	(0.131)	(0.001)	(0.541)	(0.766)	(0.489)	(0.490)	(0.451)	(0.635)
woman-owned	0.612	1.061	1.382	0.658***	0.463**	0.517	0.833	0.540***	0.710	1.693	0.445
	(0.670)	(0.865)	(0.260)	(0.000)	(0.025)	(0.141)	(0.338)	(0.007)	(0.148)	(0.500)	(0.237)
minority-owned	0.101	0.666	1.076	0.678***	0.166***	0.596	0.485***	0.664*	0.389***	0.959	0.189*
	(0.130)	(0.258)	(0.828)	(0.001)	(0.002)	(0.295)	(0.001)	(0.076)	(0.002)	(0.961)	(0.072)
hubzone	3.430	1.074	1.171	1.802***	0.322	0.784	1.841**	1.112	0.884	0.656	1.009
	(0.288)	(0.917)	(0.756)	(0.004)	(0.426)	(0.870)	(0.043)	(0.783)	(0.824)	(0.776)	(0.995)
service-disabled veteran	0.896	1.744	1.180	0.870	0.114	0.318	0.974	0.601	0.747	2.009	0.438
	(0.938)	(0.139)	(0.658)	(0.406)	(0.129)	(0.181)	(0.910)	(0.123)	(0.429)	(0.475)	(0.359)
other veteran	0.871	1.609	1.084	0.961	1.324	0.441	0.795	0.998	0.897	1.571	0.748
	(0.943)	(0.359)	(0.872)	(0.817)	(0.578)	(0.337)	(0.462)	(0.995)	(0.792)	(0.760)	(0.757)
log age	2.465	1.637**	1.219	1.554***	1.304	0.738**	1.083	1.302***	1.400***	0.721	1.937***
	(0.262)	(0.012)	(0.196)	(0.000)	(0.116)	(0.031)	(0.269)	(0.009)	(0.001)	(0.207)	(0.001)
log employment	1.607***	1.153	0.916	0.876***	1.162*	1.103*	1.070	0.896	0.936	1.135	0.842*
	(0.008)	(0.172)	(0.316)	(0.000)	(0.092)	(0.084)	(0.145)	(0.104)	(0.252)	(0.295)	(0.064)
log receipts	0.984	1.082	1.122*	1.124***	0.988	0.995	1.093***	1.270***	1.080*	0.961	0.986
	(0.927)	(0.233)	(0.085)	(0.000)	(0.808)	(0.902)	(0.005)	(0.000)	(0.074)	(0.583)	(0.837)
sole proprietorship	0.175	0.350	0.777	0.735*	0.664	0.344**	1.181	0.614	0.644	0.219	0.546
(omitted: "other" orgs)	(0.373)	(0.127)	(0.503)	(0.001)	(0.653)	(0.035)	(0.193)	(0.420)	(0.349)	(0.172)	(0.249)
partnership	0.566	0.696	0.777	0.735*	0.664	0.344**	1.181	0.614	0.644	0.219	0.546
	(0.675)	(0.521)	(0.547)	(0.091)	(0.491)	(0.047)	(0.550)	(0.199)	(0.260)	(0.122)	(0.330)
corporate not tax-exempt	0.225	0.397**	0.391***	0.806	0.677	0.551	0.891	0.931	1.013	0.304*	0.534
	(0.242)	(0.041)	(0.007)	(0.154)	(0.429)	(0.123)	(0.622)	(0.804)	(0.966)	(0.060)	(0.264)
corporate tax-exempt	1.883	3.841	0.861	0.243	23.46*	1.416	0.417	0.745	1.855	10.030	235.0***
	(0.787)	(0.479)	(0.920)	(0.327)	(0.059)	(0.838)	(0.548)	(0.840)	(0.679)	(0.310)	(0.004)
government non-classified	4.707	0.754	1.600	1.109	2.220***	0.246**	0.888	0.939	0.928	2.093	0.228
(omitted: no security reported)	(0.180)	(0.526)	(0.164)	(0.292)	(0.009)	(0.033)	(0.526)	(0.765)	(0.731)	(0.304)	(0.282)
government confidential	18.31**	1.407	0.561	0.747	0.584	0.556	0.416	0.862	0.737	5.130*	0.707
	(0.044)	(0.694)	(0.686)	(0.418)	(0.708)	(0.685)	(0.291)	(0.787)	(0.641)	(0.072)	(0.815)
government secret	2.186	0.845	2.001*	1.133	0.736	0.849	1.112	0.576	0.299***	5.061*	4.538**
	(0.534)	(0.755)	(0.060)	(0.393)	(0.719)	(0.818)	(0.648)	(0.127)	(0.007)	(0.087)	(0.023)
government top secret	0.634	0.676	1.446	0.769**	0.161***	0.524	0.597***	0.689**	0.268***	1.055	3.547***
	(0.774)	(0.435)	(0.346)	(0.012)	(0.009)	(0.139)	(0.000)	(0.038)	(0.000)	(0.953)	(0.008)
Constant	6.17e-05**	0.00130***	0.000889***	0.00441***	0.00654***	0.0774***	0.00231***	0.000194***	0.00471***	0.00731**	0.0333***
	(0.03260)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00617)	(0.00000)	(0.00000)	(0.00000)	(0.01530)	(0.00696)
Observations	743	2,757	7,333	17,744	6,422	1,680	10,367	17,106	11,795	2,056	2,207

16

Table 5: Industry Specific Regression Results

	524	525	531	532	533	541	551	561	562	611	621
SDB not 8(a)	0.224**	1.218	1.036	0.549***	0.898	0.563***	0.398	0.646***	0.621***	0.472***	0.576***
	(0.020)	(0.878)	(0.793)	(0.000)	(0.947)	(0.000)	(0.633)	(0.000)	(0.000)	(0.000)	(0.000)
8(a)	1.121	10.280	3.442***	0.831	3.317	2.183***	4.553	2.705***	1.465**	2.032***	2.229***
	(0.898)	(0.307)	(0.003)	(0.579)	(0.752)	(0.000)	(0.467)	(0.000)	(0.023)	(0.000)	(0.001)
woman-owned	0.307*	0.544	0.666**	0.876	1.253	0.858***	1.716	0.874***	1.072	0.971	0.771**
	(0.087)	(0.696)	(0.017)	(0.380)	(0.894)	(0.000)	(0.742)	(0.004)	(0.458)	(0.741)	(0.029)
minority-owned	1.762	0.245	0.344***	1.228	1.226	0.837***	1.174	0.565***	0.646***	0.422***	0.862
	(0.338)	(0.379)	(0.000)	(0.214)	(0.899)	(0.000)	(0.914)	(0.000)	(0.000)	(0.000)	(0.279)
hubzone	0.534	5.917	1.152	1.521*	2.554	1.163**	7.859	1.188*	1.196	0.647*	1.046
	(0.672)	(0.355)	(0.743)	(0.086)	(0.773)	(0.045)	(0.310)	(0.067)	(0.247)	(0.090)	(0.891)
service-disabled veteran	1.952	3.839	0.491*	1.064	1.750	0.903**	1.814	1.053	0.999	1.246*	2.143***
	(0.251)	(0.296)	(0.062)	(0.772)	(0.751)	(0.037)	(0.716)	(0.417)	(0.993)	(0.054)	(0.000)
other veteran	0.382	2.213	1.170	0.888	3.893	0.673***	3.244	1.015	1.078	1.203	0.856
	(0.505)	(0.599)	(0.485)	(0.639)	(0.398)	(0.000)	(0.497)	(0.848)	(0.641)	(0.168)	(0.446)
log age	0.981	0.783	1.631***	1.011	0.943	1.275***	0.707	1.400***	1.349***	1.299***	1.804***
	(0.925)	(0.629)	(0.000)	(0.874)	(0.930)	(0.000)	(0.524)	(0.000)	(0.000)	(0.000)	(0.000)
log employment	1.091	1.306	1.054*	1.119***	1.058	1.035***	1.305	1.031**	1.005	0.982	0.805***
	(0.435)	(0.276)	(0.061)	(0.005)	(0.917)	(0.000)	(0.305)	(0.042)	(0.844)	(0.525)	(0.000)
log receipts	1.075	0.943	1.037*	1.030	0.966	1.033***	0.970	0.994	1.034**	1.088***	1.084***
	(0.351)	(0.569)	(0.056)	(0.234)	(0.812)	(0.000)	(0.824)	(0.434)	(0.046)	(0.000)	(0.000)
sole proprietorship	0.594	0.665	1.148	1.010	0.856	0.889*	0.579	0.665***	1.162	0.941	0.627*
(omitted: "other" orgs)	(0.260)	(0.533)	(0.914)	(0.835)	(0.935)	(0.056)	(0.822)	(0.001)	(0.700)	(0.370)	(0.024)
partnership	0.594	0.665	1.148	1.010	0.856	0.889*	0.579	0.665***	1.162	0.941	0.627*
	(0.426)	(0.729)	(0.515)	(0.971)	(0.945)	(0.093)	(0.638)	(0.000)	(0.415)	(0.746)	(0.057)
corporate not tax-exempt	0.362**	0.377	1.224	1.026	0.527	0.989	0.156*	0.717***	1.045	0.879	0.787
	(0.040)	(0.353)	(0.316)	(0.910)	(0.769)	(0.849)	(0.095)	(0.000)	(0.783)	(0.424)	(0.231)
corporate tax-exempt	38.63**	60.040	1.554	0.830	0.000	0.369**	4.421	0.270**	0.178	1.107	0.274
	(0.041)	(0.189)	(0.772)	(0.899)	(0.000)	(0.016)	(0.564)	(0.018)	(0.228)	(0.906)	(0.374)
government non-classified	1.036	0.714	1.333	1.235	2.440	1.534***	1.428	1.307***	1.209*	0.975	1.303*
(omitted: no security reported)	(0.951)	(0.818)	(0.193)	(0.213)	(0.568)	(0.000)	(0.822)	(0.000)	(0.078)	(0.824)	(0.088)
government confidential	0.746	3.918	2.651**	1.498	10.880	1.836***	18.380	2.140***	1.507	0.972	1.265
	(0.840)	(0.413)	(0.020)	(0.330)	(0.377)	(0.000)	(0.155)	(0.000)	(0.156)	(0.931)	(0.491)
government secret	0.998	2.951	0.856	0.650	1.911	2.412***	1.898	1.503***	0.599**	1.064	0.538***
	(0.998)	(0.566)	(0.753)	(0.328)	(0.728)	(0.000)	(0.704)	(0.000)	(0.046)	(0.689)	(0.008)
government top secret	0.583	0.927	1.014	0.514*	3.484	2.671***	4.191	1.688***	0.466***	0.852	1.287
	(0.430)	(0.965)	(0.972)	(0.064)	(0.617)	(0.000)	(0.223)	(0.000)	(0.002)	(0.178)	(0.322)
Constant	0.00504***	0.14400	0.000614***	0.00417***	0.45600	0.00356***	0.04690	0.00417***	0.00236***	0.00162***	0.00215***
	(0.00026)	(0.39700)	(0.00000)	(0.00000)	(0.89000)	(0.00000)	(0.15800)	(0.00000)	(0.00000)	(0.00000)	(0.00000)
Observations	3,059	734	22,905	11,520	145	177,409	1,013	84,841	21,813	45,601	25,034

Table 5: Industry Specific Regression Results

	622	623	624	711	712	713	721	722	811	812	813
SDB not 8(a)	0.492	0.847	0.481***	0.307***	0.407**	0.216***	0.733***	0.708*	0.661***	0.527***	0.740
	(0.133)	(0.503)	(0.000)	(0.000)	(0.015)	(0.001)	(0.004)	(0.084)	(0.000)	(0.000)	(0.235)
8(a)	3.532**	5.168*	1.156	1.392	0.572	2.620	0.749	1.523	0.752*	0.806	6.709***
	(0.045)	(0.052)	(0.724)	(0.648)	(0.557)	(0.247)	(0.625)	(0.315)	(0.086)	(0.708)	(0.000)
woman-owned	1.055	0.904	1.020	0.769	1.076	0.430*	0.996	1.821***	0.709***	0.539***	0.803
	(0.896)	(0.771)	(0.840)	(0.246)	(0.814)	(0.071)	(0.977)	(0.001)	(0.000)	(0.000)	(0.351)
minority-owned	0.479	0.254***	0.358***	1.178	1.136	1.022	0.842	0.754	0.670***	0.410***	0.663
	(0.150)	(0.006)	(0.000)	(0.531)	(0.767)	(0.963)	(0.158)	(0.180)	(0.000)	(0.000)	(0.138)
hubzone	1.391	0.392	0.410*	1.392	2.989	0.520	1.361	1.701	1.190	1.773	2.247
	(0.650)	(0.536)	(0.080)	(0.703)	(0.225)	(0.656)	(0.553)	(0.193)	(0.233)	(0.214)	(0.159)
service-disabled veteran	2.129*	0.152	0.412***	1.411	0.187	0.558	0.550**	0.677	0.732***	0.635*	0.579
	(0.079)	(0.189)	(0.000)	(0.355)	(0.242)	(0.384)	(0.049)	(0.300)	(0.001)	(0.078)	(0.182)
other veteran	1.001	1.172	0.531***	0.995	0.965	2.198**	1.158	1.322	0.785***	0.618	1.110
	(0.999)	(0.810)	(0.001)	(0.991)	(0.958)	(0.050)	(0.479)	(0.411)	(0.004)	(0.157)	(0.780)
log age	1.214	0.887	2.746***	1.115	1.143	1.095	1.052	1.734***	1.168***	0.800***	1.394***
	(0.284)	(0.174)	(0.000)	(0.354)	(0.420)	(0.577)	(0.248)	(0.000)	(0.000)	(0.001)	(0.003)
log employment	0.915	1.133**	0.475***	0.957	0.775**	1.095	1.086***	1.164***	1.101***	1.022	0.953
	(0.372)	(0.046)	(0.000)	(0.601)	(0.028)	(0.317)	(0.003)	(0.005)	(0.000)	(0.620)	(0.441)
log receipts	1.304***	1.062	0.993	0.976	0.980	1.020	0.996	0.973	1.040***	1.076***	0.953*
	(0.009)	(0.211)	(0.604)	(0.427)	(0.655)	(0.719)	(0.764)	(0.306)	(0.000)	(0.003)	(0.084)
sole proprietorship	0.475	1.059	0.385***	0.545	0.575	0.432*	0.954	0.339***	0.786**	0.392***	0.251**
(omitted: "other" orgs)	(0.358)	(0.118)	(0.021)	(0.292)	(0.203)	(0.125)	(0.000)	(0.908)	(0.596)	(0.564)	(0.138)
partnership	0.475	1.059	0.385***	0.545	0.575	0.432*	0.954	0.339***	0.786**	0.392***	0.251**
	(0.167)	(0.819)	(0.000)	(0.387)	(0.445)	(0.084)	(0.803)	(0.006)	(0.026)	(0.003)	(0.022)
corporate not tax-exempt	0.411**	0.723	0.552***	1.122	0.504	0.366**	0.935	0.617	0.762***	0.530**	0.534
	(0.040)	(0.194)	(0.003)	(0.842)	(0.258)	(0.016)	(0.709)	(0.125)	(0.002)	(0.013)	(0.128)
corporate tax-exempt	0.338	0.934	1.372	14.400	6.257	352.3**	2.485	0.843	0.464	4.899	4.039
	(0.485)	(0.969)	(0.831)	(0.169)	(0.264)	(0.015)	(0.544)	(0.910)	(0.361)	(0.120)	(0.373)
government non-classified	1.037	0.967	1.426***	0.978	1.542	1.258	1.480**	2.396***	1.043	1.283	1.679*
(omitted: no security reported)	(0.933)	(0.959)	(0.009)	(0.950)	(0.324)	(0.631)	(0.047)	(0.000)	(0.536)	(0.314)	(0.091)
government confidential	3.577	8.559**	3.046***	1.159	1.304	2.629	1.266	0.323	1.072	0.865	4.404***
	(0.166)	(0.019)	(0.000)	(0.873)	(0.854)	(0.292)	(0.676)	(0.430)	(0.708)	(0.862)	(0.004)
government secret	0.895	5.335*	1.466	0.925	0.374	1.156	0.890	0.919	1.101	1.720*	1.445
	(0.874)	(0.091)	(0.300)	(0.909)	(0.495)	(0.871)	(0.860)	(0.867)	(0.380)	(0.066)	(0.480)
government top secret	0.461	0.944	0.706	0.099	2.080	0.679	1.442	0.390	0.460***	0.535	1.931
	(0.256)	(0.969)	(0.457)	(0.112)	(0.412)	(0.678)	(0.524)	(0.263)	(0.000)	(0.261)	(0.108)
Constant	0.000834***	0.00600***	0.0413***	0.0561***	0.0916**	0.0135***	0.00818***	0.000500***	0.00659***	0.0390***	0.0327***
	(0.00002)	(0.00000)	(0.00000)	(0.00064)	(0.03280)	(0.00005)	(0.00000)	(0.00000)	(0.00000)	(0.00000)	(0.00000)
Observations	2,486	4,935	15,115	7,415	2,708	3,103	12,836	6,470	36,540	10,519	9,000

18

Table 6
NAICS Codes Referenced in Table 5

111 – Crop Production
112 – Animal Production
113 – Forestry and Logging
114 – Fishing, Hunting and Trapping
115 – Support Activities for Agriculture and Forestry
211 – Oil and Gas Extraction

212 – Mining (except Oil and Gas)
213 – Support Activities for Mining
221 – Utilities
236 – Construction of Buildings
237 – Heavy and Civil Engineering Construction
238 – Specialty Trade Contractors
311 – Food Manufacturing
312 – Beverage and Tobacco Product Manufacturing
313 – Textile Mills
314 – Textile Product Mills

315 – Apparel Manufacturing
316 – Leather and Allied Product Manufacturing
321 – Wood Product Manufacturing
322 – Paper Manufacturing
323 – Printing and Related Support Activities
324 – Petroleum and Coal Products Manufacturing
325 – Chemical Manufacturing
326 – Plastics and Rubber Products Manufacturing
327 – Nonmetallic Mineral Product Manufacturing

331 – Primary Metal Manufacturing
332 – Fabricated Metal Product Manufacturing
333 – Machinery Manufacturing
334 – Computer and Electronic Product Manufacturing
335 – Electrical Equipment, Appliance and Component Manufacturing
324 – Petroleum and Coal Products Manufacturing
325 – Chemical Manufacturing

326 – Plastics and Rubber Products Manufacturing

327 – Nonmetallic Mineral Product Manufacturing
331 – Primary Metal Manufacturing
332 – Fabricated Metal Product Manufacturing
333 – Machinery Manufacturing
334 – Computer and Electronic Product Manufacturing
335 – Electrical Equipment, Appliance and Component Manufacturing

336 – Transportation Equipment Manufacturing
337 – Furniture and Related Product Manufacturing
339 – Miscellaneous Manufacturing
423 – Merchant Wholesalers, Durable Goods
424 – Merchant Wholesalers, Nondurable Goods
425 – Wholesale Electronic Markets and Agents and Brokers
441 – Motor Vehicle and Parts Dealers
442 – Furniture and Home Furnishings Stores
443 – Electronics and Appliance Stores
444 – Building Material and Garden Equipment and Supplies Dealers
445 – Food and Beverage Stores
446 – Health and Personal Care Stores
447 – Gasoline Stations
448 – Clothing and Clothing Accessories Stores
451 – Sporting Good, Hobby, Book and Music Stores
452 – General Merchandise Stores
453 – Miscellaneous Store Retailers
454 – Nonstore Retailers
481 – Air Transportation

482 – Rail Transportation
483 – Water Transportation
484 – Truck Transportation
485 – Transit and Ground Passenger Transportation
486 – Pipeline Transportation of Natural Gas Industry

487 – Scenic and Sightseeing Transportation
488 – Support Activities for Transportation

491 – Postal Service

492 – Couriers and Messengers
493 – Warehousing and Storage
511 – Publishing Industries (except Internet)
512 – Motion Picture and Sound Recording Industries
515 – Broadcasting (except Internet)
517 – Telecommunications

518 – Data Processing, Hosting, and Related Services
519 – Other Information Services
522 – Credit Intermediation and Related Activities
523 – Financial Investments and Related Activities
524 – Insurance Carriers and Related Activities
525 – Funds, Trusts, and Other Financial Vehicles
531 – Real Estate
532 – Rental and Leasing Services
533 – Lessors of Nonfinancial Intangible Assets
541 – Professional, Scientific and Technical Services

551 – Management of Companies and Enterprises
561 – Administrative and Support Services
562 – Waste Management and Remediation Services
611 – Educational Services
621 – Ambulatory Health Care Services
622 – Hospitals
623 – Nursing and Residential Care Facilities
624 – Social Assistance
711 – Performing Arts, Spectator Sports and Related Industries
712 – Museums, Historical Sites and Similar Institutions
713 – Amusement, Gambling and Recreation Industries
721 – Accommodation
722 – Food Services and Drinking Places
811 – Repair and Maintenance

812 – Personal and Laundry Services
813 – Religious, Grantmaking, Civic, Professional and Similar Organizations

19